

AMENDMENTS TO THE CLAIMS

Claim 1. (Canceled)

Claim 2. (Currently Amended) A circuit board ~~according to claim 1~~, comprising:
an insulating ceramic substrate having two surfaces; and
conductive layers bonded to both surfaces of the insulating ceramic substrate,
wherein the conductive layers comprise at least 99.98% by mass of aluminum, and display
an average crystal grain diameter within a range from 0.5 mm to 5 mm and a standard
deviation σ of the crystal grain diameter less than or equal to 2 mm, and
wherein the conductive layers comprise rolled materials comprising at least 20 ppm of each
of Cu, Fe and Si.

Claim 3. (Currently Amended) A circuit board according to claim 2, wherein the conductive
layers are rolled with a draft from a final heat treatment of at least 15%.

Claim 4. (Currently amended) A circuit board according to claim ~~[[1]]~~ 2, wherein a surface
area of a crystal with maximum crystal grain diameter within the conductive layers accounts for less
than or equal to 15% of a surface area of the insulating ceramic substrate.

Claim 5. (Currently Amended) A circuit board according to claim ~~[[1]]~~ 2, wherein the
insulating ceramic substrate is formed from at least one of Al_2O_3 , AlN and Si_3N_4 .


Claim 6. (Currently amended) A circuit board according to claim ~~[[1]]~~ 2, wherein the conductive layers are bonded to the surface of the insulating ceramic substrate using a brazing material, and the brazing material is one or more materials selected from a group consisting of Al-Si based materials, Al-Ge based materials, Al-Mn based materials, Al-Cu based materials, Al-Mg based materials, Al-Si-Mg based materials, Al-Cu-Mn based materials, and Al-Cu-Mg-Mn based materials.

Claim 7. (Previously Presented) A circuit board according to claim 2, wherein a surface area of a crystal with maximum crystal grain diameter within the conductive layers accounts for no more than 15% of a surface area of the insulating ceramic substrate, the insulating ceramic substrate is formed from at least one of Al_2O_3 , AlN and Si_3N_4 , the conductive layers are bonded to the surface of the insulating ceramic substrate using a brazing material, and the brazing material is one or more materials selected from a group consisting of Al-Si based materials, Al-Ge based materials, Al-Mn based materials, Al-Cu based materials, Al-Mg based materials, Al-Si-Mg based materials, Al-Cu-Mn based materials, and Al-Cu-Mg-Mn based materials.

Claim 8. (Canceled)

Claim 9. (Currently Amended) A method of producing a circuit board ~~according to claim 8,~~
~~further~~ comprising the ~~step~~ steps of:

producing the conductive layer, comprising the steps of:

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then—conducting rolling with a draft from a final heat treatment of at least 15%;

positioning the conductive layer comprising at least 99.98% by mass of aluminum on
top of an insulating ceramic substrate with a brazing material disposed therebetween;

bonding the conductive layer and the insulating ceramic substrate together via the brazing material by compressing the conductive layer and the insulating ceramic substrate at a pressure within a range from 50 kPa to 300 kPa while heating to a temperature of at least 600°C in one of a vacuum and an inert gas atmosphere;

making an average crystal grain diameter of the conductive layer within a range from
0.5 mm to 5 mm; and

making a standard deviation σ of the crystal grain diameter no more than 2 mm.

Claim 10. (Currently Amended) A power module comprising a circuit board according to claim [[1]] 2, and a heat radiating plate for supporting the circuit board.

Claim 11 (Previously Presented) A power module according to claim 10, wherein at least a portion of the conductive layer of the circuit board is bonded to the heat radiating plate using a circuit board brazing material with a lower melting point than the brazing material.